

SNOOPY: STUDENT NANOEXPERIMENTS FOR OUTREACH AND OBSERVATIONAL PLANETARY INQUIRY. K. R. Kuhlman,¹ M. H. Hecht,¹ D. E. Brinza,¹ J. E. Feldman,¹ S. D. Fuerstenau,¹ L. Friedman,² L. Kelly,² J. Oslick,² K. Polk,² L. E. Möller,² K. Trowbridge,² J. Sherman,² A. Marshall,² A. L. Diaz,² C. Lewis,³ C. Gyulai,³ G. Powell,³ T. Meloy,⁴ P. Smith,⁵ ¹Jet Propulsion Laboratory, California Institute of Technology, 4800 Oak Grove Dr., Pasadena, CA 91109, ²The Planetary Society, Pasadena, CA 91106, ³Visionary Products, Inc., 11814 South Election Drive, Suite 200, Draper, UT 84020, ⁴West Virginia Univ., Morgantown, WV 26506, ⁵The Univ. of Arizona, Tucson, AZ 85721.

ABSTRACT

Student Nanoexperiments for Outreach and Observational Planetary Inquiry (SNOOPY) is an example of payload-integrated education and public outreach which directly involving students and teachers in planetary science missions. The SNOOPY payload was derived from the Mars Environmental Compatibility Assessment (MECA) Student Nanoexperiment Project, a partnership between MECA, The Planetary Society (TPS) and Visionary Products, Inc. (VPI). The MECA instrument suite, developed at the Jet Propulsion Laboratory (JPL), was scheduled for launch aboard the canceled Mars Surveyor Lander 2001. Students 18 years of age and younger were invited to propose experiments that were consistent with MECA's Mission: to help us better understand how humans will be able to live on Mars.

Sixteen entries were received from seven countries. Two nanoexperiments were chosen for flight, the Angle of Repose of Martian Dust and Contradistinctive Copper. These experiments addressed the behavior of windblown Martian dust on surfaces and the oxidation of different textures of copper. An alternate student nanoexperiment was selected to investigate the behavior of spacesuit materials on Mars.

An important goal of this project was publication of the students' work and results in the scientific literature. One student, Lucas Möller presented the results of his Angle of Repose nanoexperiment using JSC Lunar-1 and JSC Mars-1 simulants at the 32nd Lunar and Planetary Science Conference.

The nanoexperiments, now called SNOOPY, have been redesigned with a generic lander interface. The SNOOPY team plans to produce curricula describing how students and teachers can reproduce the nanoexperiments and perform their own calibration experiments. Should SNOOPY eventually fly, the data returned will be released to students and teachers as soon as it is released to the SNOOPY team. In the interim, the students will publish their calibration results in the scientific literature.